REMARKS

This Preliminary Amendment responds to the Office Action dated October 23, 2002 in which the Examiner rejected claims 1-2, 4-7 and 35-59 under 35 U.S.C. § 112, second paragraph, objected to claim 54, and rejected claims 1-2, 4-7 and 35-59 under 35 U.S.C. § 103.

As indicated above, a minor informality in claim 54 has been corrected. It is respectfully requested that the Examiner approves the correction and withdraws the objection to claim 54.

As indicated above, claims 1, 36, 42, 48 and 54 have been amended in order to more particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. It is respectfully submitted that the rejection of the claims under 35 U.S.C. § 112, second paragraph no longer applies. Therefore, it is respectfully requested that the Examiner withdraws the rejection to the claims under 35 U.S.C. § 112, second paragraph.

Claims 1-2, 5, 7 and 35 were rejected under 35 U.S.C. § 103 as being unpatentable over *Nakamura et al.* (German reference 197-18-174) in view of *Yabushita* (U.S. Patent No. 5,389,135).

Nakamura et al. appears to disclose in its corresponding U.S. application (U.S. Patent No. 5,925,295) a re-plasticizing type injection molding machine 1 generally comprises an injection apparatus, 8, a plasticizing device 5 and an accumulation apparatus 13. An injection apparatus 8 has a second barrel 6 at the front portion. Within the second barrel 6, a second screw 7 is housed. The rear end of the second barrel 6 is mounted on a

screw driving portion 21 which drives the second screw 7. The second barrel 6 has an injection nozzle 22 at the front end, and is provided with a resin inlet 6i at the rear portion. (col. 3, lines 40-48) On the upper end of the screw driving portion 21, the plasticizing device 5 is arranged. The plasticizing device 5 has a first barrel 2 at the front portion. A first screw 3 is disposed within the first barrel 2. The first barrel 2 is descended frontwardly to have a resin outlet 2o at the front end. The first barrel 2 has a hopper 4 for supplying a molding material at the rear portion. (col. 3, lines 58-64) At the upper end of the resin inlet 6i in the second barrel 6, the vertically standing accumulation device 13 is provided. The accumulation device 13 has a stock chamber 12 mounted on the second barrel 6. Within the stock chamber 12, a pushing plunger 11 is disposed. On the upper end of the stock chamber 12, a pushing cylinder 29 for driving the pushing plunger 11 forward (downward) is provided at the upper end of the stock chamber 12. It should be noted that the front end of the first barrel 2 is mounted at the lower end of the stock chamber 12. The resin outlet 2o of the first barrel 2 and the resin inlet 6i of the second barrel 6 are continuously connected via a resin passage 9. At the intermediate position of the resin passage 9, a switching valve 10 is provided. (col. 4, lines 14-27) By opening the switching valve 10, the resin passage 10s of the switching valve 10 is placed at the position illustrated by the solid line in FIG. 3. As a result, the molten resin discharged from the resin outlet 2o of the plasticizing device is supplied within the second barrel 6 through a path shown by arrow H1. With a slight delay Ts from an opening command for the switching valve, the pushing cylinder 13 is actuated see FIG. 4(f). The reason is that actuation of the pushing cylinder 13 before sufficiently opening the switching valve 10

prevents the molten resin from causing surge flow. The pushing plunger 11 is moved and the molten resin in the stock chamber 12 is supplied into the second barrel 6 via a path shown by an arrow H2. Then, the position of the second screw 7 is monitored. When the second screw 7 reaches a preliminarily set valve control position Xv which is set before a measuring termination position Xe for a predetermined distance (in the extent of several mm), operation of the pushing cylinder 13 is terminated and the switching valve 10 is closed (step S5, S6). The molten resin discharged from the plasticizing device 5 is accumulated in the stock chamber 12 through a path shown by arrow H3 in FIG. 3. Accordingly, at this timing, to the pushing plunger 11, a predetermined back pressure is applied (see FIG. 4(g)). Furthermore, the second screw 7 continues rotation and thus measuring is continued. Therefore, when the second screw 7 reaches the target measuring terminating position Xe (timing tc in FIG. 4(c)), rotation of the second screw 7 is terminated (steps S7, S8 and S9). The measuring step is therefore completed, and the process moves to the injection step. (col. 5, lines 5-35)

Thus, *Nakamura et al.* merely discloses that molten resin is accumulated in the stock chamber 12 during a measuring step (see column 5, lines 24-35). Nothing in *Nakamura et al.* shows, teaches or suggests a buffering unit receiving resin during an injection by the injection unit as claimed in claim 1. Rather, *Nakamura et al.* merely discloses that the resin discharge from the plasticizing device 5 is accumulated in the stock chamber 12 during a measuring step.

WRONG

Yabushita appears to disclose the injection molding machine 30 comprises a hopper 31 for supplying resin material in the form of pellets to the machine main boy, a nozzle 32

connected to the lower die 10 for supplying molten resin thereto, and an in-line screw 33 provided inside the main body for pushing the molten resin material out to the nozzle 32 by a prescribed amount with its forward feed motion. The amount of the resin material supplied to each of the valve gates 13 is controlled according to the displacement of the in-line screw 33 in view of the fact that the position of the in-line screw 33 can be accurately detected. More specifically, a positional sensor 34 is installed in such a manner that the position of the in-line screw 33 can be accurately detected, and an output signal from this positional sensor 34 is supplied to a CPU 40 which in turn issues command to each of the three valve gates 13a, 13b and 13c illustrated in FIG. 3 to open and close them in a sequential manner. (col. 4, lines 39-58) Fig. 5 shows the provision of metering means 15 for metering and supplying a prescribed amount of molten resin to each of the gates 14 branching off from the hot runner 12. As illustrated in Fig. 5, the metering means 15 is provided in the corresponding gate 14, and a prescribed amount of molten resin metered by the metering means 15 is distributed to the die surface of the lower die 10 from the gates 14 via a three-way rotary valve 16. The structure of this metering means 15 comprises a metering chamber 151 communicating with the hot runner 12, and a plunger 153 connected to the hydraulic cylinder 152 is received in this metering chamber 151. A sensor 154 is provided in such a manner as to detect the position of this plunger 153, and by receiving a signal from the position sensor 154 the CPU 40 issues a command to the solenoid valve 155 to actuate the hydraulic cylinder 152 and open and close the rotary valve 16. More specifically, the resin material which is supplied into the hot runner 12 from the nozzle 32 of the injection molding machine 30 is filled into the metering chamber

151 via the rotary valve 16, as the plunger 153 receded to the left as shown in the drawing. When the plunger 153 has receded to a prescribed position, the rotary valve 16 is closed as the position sensor 154 detects the position of the plunger 153, and send a signal to this effect to the CPU 40. The CPU 40 then moves the plunger 153 to the right by opening the solenoid valve 155 and actuating the hydraulic cylinder 152, and communicates the metering chamber 151 with the gate 14 by opening the rotary valve 16 so that the resin material metered by the metering chamber 151 may be distributed to the die surface of the lower die 10 via the gate 14. Thus, by provision of the metering means in which a plunger 153 is provided for each of the gates 14, and the volume of the resin material to be injected is metered by the stroke of the plunger 153, the metering at each of the gates can be accomplished in a highly accurate manner. (col. 5, lines 26-68)

Thus, *Yabushita* merely discloses an injection molding machine 30 having a metering means 15 for distributing molten resin to a lower die 10 from gates 14 via a valve 16. Thus, nothing in *Yabushita* shows, teaches or suggests a buffering chamber as claimed in claim 1. Rather, *Yabushita* merely discloses a plasticizing device (33) and a metering device 15 (injecting unit).

Additionally, *Yabushita* merely disclose a sensor 154 detecting position of a plunger 153 in the metering means 15. Thus, nothing in *Yabushita* shows, teaches or suggests a detecting sensor detecting a position of a reciprocating plunger in a buffering unit as claimed in claim 1 since *Yabushita* does not disclose a buffering unit. Rather, the sensor 154 of *Yabushita* would in fact measure the position within the injecting unit (metering unit 15).

A combination of *Nakamura et al.* and *Yabushita* would merely suggest to replace the injection unit 8 of *Nakamura et al.* with the metering means 15 of *Yabushita*. Thus, nothing in the combination of *Nakamura et al.* and *Yabushita* show, teach or suggest a) a buffering unit receiving resin during an injection by the injection unit or b) a detecting sensor detecting a position of a reciprocating plunger in a buffering unit as claimed in claim 1. Therefore, Applicants respectfully request the Examiner withdraws the rejection to claim 1 under 35 U.S.C. § 103.

Claims 2, 5, 7 and 35 depend from claim 1 and recite additional features. It is respectfully submitted that claims 2, 5, 7, and 35 would not have been obvious within the meaning of 35 U.S.C. § 103 over *Nakamura et al.* and *Yabushita* at least for the reasons as set forth above. Therefore, it is respectfully requested that the Examiner withdraws the rejection to claims 2, 5, 7 and 35 under 35 U.S.C. § 103.

Claims 36-37, 39 and 41 were rejected under 35 U.S.C. § 103 as being unpatentable over *Nakamura et al.* in view of *Amano et al.* (U.S. Patent No. 5,773,042).

As discussed above, *Nakamura et al.* merely discloses an injection apparatus 8, a plasticizing device 5 and an accumulating apparatus 13. Nothing in *Nakamura et al.* shows, teaches or suggests a) a buffering unit receiving plasticated resin during an injection by the injection unit or b) a pressure sensor detecting a pressure in a buffering chamber as claimed in claim 36. Rather, *Nakamura et al.* merely discloses a plasticizing unit 5, accumulator 13 and injection unit 8.

Amano et al. appears to disclose in Figures 3a and 3b a dual shaft screw plasticizing unit 41, an accumulator 42, and an injection molder 43. (col. 6, lines 39-41)

The accumulator 42 is comprised of the cylinder 68 and the flange 67. The accumulator chamber 70 is formed at the tip of the plunger 69. The periphery of the accumulator chamber 70 is heated by a heater not shown in the drawings. A press-in hydraulic cylinder 72 is connected to the rear end of the plunger 69 by means of the rod 71. The exit 73 at the tip of the accumulator chamber 70 is connected to the injection molder 43 by means of the open/close valve 74. (col. 7, lines 29-36) A pressure sensor is installed for detecting the pressure inside the cylinder chamber in the cylinder 78 in the injection molder 43, and also pressure sensors 83 and 84 are installed for detecting pressure inside the accumulator chamber 70 in the cylinder 68 of the injection molder 42, and the pressure is detected inside the cylinder chamber 80 with at least the said pressure sensor 82, and the hydraulic pressure on the reversing side of the hydraulic cylinder 77 is then regulated to stay below 50 kg/cm^2 while the plunger 79 is moved in reverse. The reversing speed of the plunger 79 can be controlled at this time according to the lowering speed of the plunger 69 and the value from the sensor 82. Also at this time, the pressure inside the accumulator chamber 70 can be detected by the said pressure sensors 83 and 84 and the reversing speed of the plunger 79 regulated based on the values from these sensors 83 and 84, so that along with highly precise control by absorbing pressure variations in the plasticized long fiber resin, damage to the long fibers is inhibited and weighing accuracy of the molten resin is maintained. (col. 9, lines 31-50)

Thus, *Amano et al.* merely discloses connecting an accumulation chamber 70 to an injection molder 43 by means of an open/close valve 74. Nothing in *Amano et al.* shows, teaches or suggests a buffering unit receiving the plasticated resin during an injection by

the injection unit as claimed in claim 36. Rather, *Amano et al.* merely discloses connecting the accumulation chamber 70 to the injection molder 43 by means of an open/close valve 74.

Additionally, *Amano et al.* merely discloses pressure sensors 83 and 84 detecting pressure inside an accumulator chamber 70 to regulate the reversing speed of a plunger 79 in the injection molder 43. Nothing in *Amano et al.* shows, teaches or suggests a pressure sensor detecting pressure to control the resin pressure in the buffering unit to be constant as claimed in claim 36. Rather, *Amano et al.* merely discloses that the pressure detected by the pressure sensors 83, 84 are used to regulate the reversing speed of the plunger 79 in the injection molder 43.

Since nothing in *Nakamura et al.* or *Amano et al.* show, teach or suggest a) a buffering unit receiving plasticated resin during an injection by an injection unit or b) controlling resin pressure to be constant in a buffering unit based upon detected pressure as claimed in claim 36, it is respectfully requested that the Examiner withdraws the rejection to claim 36 under 35 U.S.C. § 103.

Claims 37, 39 and 41 depend from claim 36 and recite additional features. It is respectfully submitted that claims 37, 39 and 41 would not have been obvious within the meaning of 35 U.S.C. § 103 over *Nakamura et al.* and *Amano et al.* at least for the reasons as set forth above. Therefore, it is respectfully requested that the Examiner withdraws the rejection to claims 37, 39 and 41 under 35 U.S.C. § 103.

Claims 42-43, 45, 47-49, 51 and 53 were rejected under 35 U.S.C. § 103 as being unpatentable over *Baigent* (U.S. Patent No. 3,080,610) in view of *Yabushita*.

Baigent appears to disclose a machine in which the thermoplastic material, instead of being injected direct from the preplasticising injection chamber into the mould is injected from said preplasticising chamber into the transfer injection chamber from which the material is then injected into the mould. (col. 1, lines 65-71) The transfer unit proper comprises a transfer cylinder or chamber 10 surrounded over the major portion of its length by heating elements 11 for keeping the thermoplastic material at the desired degree of plasticity prior to being injected into the mould. At the upper end the transfer chamber or cylinder is provided with an injection opening or orifice 10a adapted to register in sealing engagement with the inlet orifice 22 of a mould 23. Near the lower end of the transfer chamber or cylinder is a lateral inlet orifice 12 through which the thermoplastic material is injected into said transfer chamber 10 from the preplasticising chamber 3 of the preplasticising unit. The inlet orifice 12 of the transfer chamber or cylinder 10 is connected with the injection nozzle 3a of the preplasticising chamber 3 by an intermediate extension conduit 13 which is surrounded throughout its length by suitable heating elements 14. This intermediate extension conduit 13 is connected with the nozzle 3a of the preplasticising chamber and with the inlet orifice 12 of the transfer chamber or cylinder 10 by ball and socket type connections, that is said conduit 13 is provided at its ends with spherical portions which register with corresponding spherical seatings in the wall of the transfer chamber or cylinder 10 and the injection nozzle 3a. By this means any relative vertical displacement of the transfer unit and the preplasticising unit will not result in damage or fracture of the extension conduit 13 or affect its function and will prevent any stresses from being transferred to the preplasticising unit or the transfer unit. (col. 2, lines

42-71, emphasis added) Hydraulic pressure from pump P2 is then directed through ports P and A of valve V3 and ports P and B of valve V4 to hydraulic motor HM, which operates to start the refill period of the plasticising chamber and when the plasticating chamber is fully recharged the rearward movement of the plunger screw 5 operates limit switch LS2 to de-energize solenoid B of valve V4. Pump P2 then delivers to tank through ports P and T of valve V4. (col. 3, line 71 through col. 4, line 3) The plasticating screws 5 are thus moved forward to start the injection of the contents of the preplasticising chamber 3 into cavity 10 of the transfer cylinder. When this injection is completed the timer T3 ends its timed period so that its normally closed contacts open to de-energise solenoid A of valve V4 and pump P2 delivers to tank. (col. 4, lines 30-36)

Thus, *Baigent* merely discloses that screws 5 move forward to inject resin from chamber 3 into cavity 10 of the transfer cylinder. Thus, nothing in *Baigent* shows, teaches or suggests a buffering unit receiving plasticized resin during an injection by the injection unit as claimed in claims 42 and 48. Rather, column 4 lines 30-33 of *Baigent* discloses that the screws 5 are moved forward to start injection. Thus, since the intermediate extension conduit 13 of *Baigent* is connected between the nozzle 3A and the inlet orifice 12, the conduit 13 will not receive the resin until the plasticating screws 3 are moved forward and thus the conduct 13 will not receive resin during the injection by the injection unit (i.e. ram 14 movement).

Furthermore, *Baigent* merely discloses a limit switch LS2 which deenergize a solenoid of a valve V4. Nothing in *Baigent* shows, teaches or suggests a position detecting sensor detecting position of a screw to control the amount of resin input to the buffering

chamber as claimed in claim 42 or a position detecting sensor detecting a position of a piston rod to control the amount of resin input into the buffering chamber as claimed in claim 48. Rather, *Baigent* merely discloses a limit switch which deenergizes a solenoid of a valve.

Additionally, *Baigent* merely discloses at column 2, lines 42-71 an intermediate extension conduit 13 connected with the nozzle 3a of the preplasticizing chamber 3 and the inlet orifice 12 of the transfer chamber or cylinder 10 by ball and socket type connections. Nothing in *Baigent* shows, teaches or suggests a buffering unit contained in the plasticating unit as claimed in claims 49 and 55 and new claim 60. Rather, *Baigent* clearly teaches away from the claimed invention since the intermediate extension conduit 13 is connected between the nozzle 3a of the preplasticizing chamber 3 and the inlet orifice 12 of the cylinder 10 (col. 2, lines 42-71). Furthermore, applicants respectfully submit that reference number 13 is incorrectly indicated in Fig. 3 of *Baigent* based upon col. 2, lines 42-71.

As discussed above, *Yabushita* merely discloses a positional sensor 34 installed in such a manner that the position of an in-line screw 33 is detected and an output signal from the positional sensor is supplied to a CPU 40 which in turn issues commands to each of three valve gates 13 to open and close in a sequential manner (col. 4, lines 46-58). Thus nothing in *Yabushita* shows, teaches or suggests a position detecting sensor detecting a position of a screw to control the amount of resin input to a buffering chamber as claimed in claim 42 or a position detecting sensor detecting a position of a piston rod to control the

amount of resin input to a buffering chamber as claimed in claim 48. Rather, the positional sensor 34 is used by a CPU 40 to open and close valve gates 13.

Since nothing in *Baigent* or *Yabushita* show, teach or suggest a) a buffering unit receiving resin during injection or b) position detecting sensors detecting position to control the amount of resin input to a buffering chamber as claimed in claims 42 and 48, it is respectfully requested that the Examiner withdraws the rejection to claims 42 and 48 under 35 U.S.C. §103.

Claims 43, 45, 47, 49, 51 and 53 depend from claims 42 and 48 and recite additional features. It is respectfully submitted that claims 43, 45, 47, 49, 51 and 53 would not have been obvious within the meaning of 35 U.S.C. §103 over *Baigent* and *Yabushita* at least for the reasons as set forth above. Furthermore, nothing in *Baigent* or *Yabushita* show, teach or suggest that the buffering chamber is contained in the plasticating unit as claimed in claims 43 and 49 and new claims 60-70 since the intermediate conduct 13 is clearly described in column 2 lines 54-62 as being provided between the injection nozzle 3a of the plasticating chamber 3 and the inlet orifice of the cylinder 10. Therefore, Applicants respectfully request the Examiner withdraws the rejection to claims 43, 45, 47, 49, 51 and 53 under 35 U.S.C. §103 and allows new claims 60-70.

Claims 54-55, 57 and 59 were rejected under 35 U.S.C. §103 as being unpatentable over *Baigent* in view of *Amano et al.*

As discussed above, nothing in *Baigent* shows, teaches or suggests a) a buffering unit receiving the resin plasticated in the plasticating unit during injection by the injection unit or b) a pressure sensor detecting pressure as claimed in claim 54.

As discussed above, *Amano et al.* merely discloses pressure sensors 83 and 84 which are used to regulate the reversing speed of the plunger 79 in the injection molder 43. Nothing in *Amano et al.* shows, teaches or suggests a pressure sensor detecting pressure in the buffering chamber so that resin pressure is controlled to be constant in the buffering chamber as claimed in claim 54. Rather, *Amano et al.* merely discloses that the pressure sensors 83, 84 are used to regulate the reversing speed of the injection plunger 79.

Since nothing in *Baigent et al.* or *Amano et al.* show, teach or suggest a) a buffering unit receiving plasticated resin during injection by the injection unit or b) a pressure sensor detecting pressure so that a constant resin pressure is provided in the buffering chamber as claimed in claim 54, it is respectfully requested that the Examiner withdraws the rejection to claim 54 under 35 U.S.C. §103.

Claim 55, 57 and 59 depend from claim 54 and recite additional features. It is respectfully submitted that claims 55, 57 and 59 would not have been obvious within the meaning of 35 U.S.C. §103 over *Baigent* and *Amano et al.* at least for the reasons as set forth above. Furthermore, as discussed above, nothing in *Baigent* or *Amano et al.* show, teach or suggest that the buffering unit is contained in the plasticating unit as claimed in claim 55 or new claims 60-70. Therefore, Applicants respectfully request the Examiner withdraws the rejection to claims 55, 57 and 59 under 35 U.S.C. §103 and allows new claims 60-70.

Claims 4 and 6 were rejected under 35 U.S.C. §103 as being unpatentable over *Nakamura et al.* in view of *Yabushita* and further in view of *Cheng* (U.S. Patent No. 5,098,267). Claims 38 and 40 were rejected under 35 U.S.C. §103 as being unpatentable

over *Nakamura et al.* in view of *Amano et al.* and further in view of *Cheng*. Claims 44, 46, 50 and 52 were rejected under 35 U.S.C. §103 as being unpatentable over *Baigent* in view of *Yabushita* and further in view of *Cheng*. Claims 56 and 58 were rejected under 35 U.S.C. §103 as being unpatentable over *Baigent* and *Amano et al.* and further in view of *Cheng*.

As discussed above, since nothing in the primary references shows, teaches of suggests the primary features as discussed above, it is respectfully submitted that the combination of the secondary references with the primary references will not overcome the deficiencies of the primary references. Therefore, Applicants respectfully request the Examiner withdraws the rejection to claims 4, 6,38, 40, 44, 46, 50, 52, 56 and 58 under 35 U.S.C. §103.

Thus it now appears that the application is in condition for reconsideration and allowance. Reconsideration and allowance at an early date are respectfully requested.

If for any reason Examiner feels that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed within the currently set shortened statutory period, applicants respectfully petition for an appropriate extension of time. The fees for such extension of time may be charged to our Deposit Account No. 02-4800.

In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

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Marked-up Claims 1, 36, 42, 48 and 54

1. (Thrice Amended) A thermoplastic resin injection molding machine comprising:

a plasticating unit for plasticating a thermoplastic resin,

an injecting unit connected to the plasticating unit through a connecting passage, to inject the plasticated resin into a mold,

a buffering unit having a buffering chamber having a volume at least equal to the injection quantity of the resin per shot, said buffering unit receiving the resin plasticated in the plasticating unit during an injection by the injection unit, and said buffering unit feeding a measured amount of the resin held in the buffering chamber into the injecting unit [during measuring resin into] after injection by the injection unit,

a plunger reciprocatably in said buffering unit, and

a detecting sensor detecting a [measurement] position of the plunger.

36. (Amended) A thermoplastic resin injection molding machine comprising:

a plasticating unit for plasticating a thermoplastic resin,

an injecting unit connected to the plasticating unit through a connection passage to inject the plasticated resin into a mold,

a buffering unit having a buffering chamber having a volume at least equal to the injection quantity of the resin per shot, said buffering unit receiving the resin plasticated in the plasticating unit during an injection by the injection unit, said buffering unit feeding a

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Marked-up Claims 1, 36, 42, 48 and 54

measured amount of the resin held in the buffering chamber into the injecting unit [during measuring resin into] after injection by the injection unit, and

a pressure sensor detecting a pressure in said buffering chamber wherein resin pressure is controlled to be constant in the buffering unit based upon detected pressure.

42. (Amended) A thermoplastic resin injection molding machine comprising:

a plasticating unit for plasticating a thermoplastic resin,

an injecting unit connected to the plasticating unit through a connecting passage to inject the plasticated resin into a mold,

a buffering unit having a buffering chamber having a volume at least equal to the injection quantity of the resin per shot, said buffering unit receiving the resin plasticated in the plasticating unit during an injection by the injection unit, and said buffering unit feeding a measured amount of the resin held in the buffering chamber into the injecting unit after injection by [during measuring resin into] the injection unit,

a reciprocating screw in said plasticating unit, and

a position detecting sensor detecting a [measurement] position of said screw to control the amount of resin input to the buffering chamber.

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Marked-up Claims 1, 36, 42, 48 and 54

48. (Amended) A thermoplastic resin injection molding machine comprising:

a plasticating unit for plasticating a thermoplastic resin,

an injecting unit connected to the plasticating unit through a connecting passage to inject the plasticated resin into a mold,

a buffering unit having a buffering chamber having a volume at least equal to the injection quantity of the resin per shot, said buffering unit receiving the resin plasticated in the plasticating unit during an injection by the injection unit, and said buffering unit feeding a measured amount of the resin held in the buffering chamber into the injecting unit [during measuring resin into] after injection by the injection unit,

a reciprocating screw in said plasticating unit,

a reciprocating piston rod [connecting] connected to said screw, and

a position detecting sensor detecting a [measurement] position of said piston rod to control the amount of resin input to the buffering chamber.

54. (Amended) A thermoplastic resin injection molding machine comprising:

a plasticating unit for plasticating a thermoplastic resin,

an injecting unit connected to the plasticating unit through a connecting passage to inject the plasticated resin into a mold,

a buffering unit having a buffering chamber having a volume at least equal to the injection quantity of the resin per shot, said buffering unit receiving the resin plasticated in

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Marked-up Claims 1, 36, 42, 48 and 54

the plasticating unit during an injection by the injection unit, and said buffering unit feeding a measured amount of the resin held in the buffering chamber into the injecting unit [during measuring resin into] after injection by the injection unit, the buffering chamber provided in said plasticating unit, and

a pressure sensor detecting [a detecting] a pressure in said buffering chamber wherein resin pressure is controlled to be constant in the buffering chamber based upon detected pressure.